

Hitachi TM-1000 Tabletop SEM Users Manual



Coral name: <none>
Model: Hitachi TM-1000
Location: Nanofab, Building 215
Contact: nanofab_metrology@nist.gov
Revision: 1.0

Samples must be dry, and free of volatile compounds or loose debris that could contaminate the SEM.

Samples, especially electrically conducting samples, usually only need only to be mounted to the specimen stub using a conducting adhesive pad. Most specimens are reasonably well imaged without special preparation.

Generally it is worth trying to image a sample before you do anything special to prepare it.

Basic Operation

1. Set the green "Exchange" button for vacuum (in) or air (out), depending on whether a specimen that you want to view is already in place or if you want to put new a specimen in.
2. To insert a specimen (already mounted on the stub, coated as necessary, and taped to the holder), with the red indicator light showing "air" pull out the sample access drawer and place the specimen, making sure you have proper clearance for the sample. Sample stubs should be screwed into place on the stage.
3. Make sure the x- and y-positions are set to zero (markers are visible inside the sample chamber) so the sample stage is centered.
4. Slide the door in, and holding it gently against the stop, press the Exchange button in to initiate the vacuum.
5. Start the TM-1000 program. (Figure 1)
6. When the green "vacuum" light is steady you may press the "Start" button in the TM-1000 window and begin imaging.
 - (a) For initial surveying, and locating places of interest, use the "Fast" button, so the image updates quickly.
 - (b) For higher quality images, use the "Slow" button.
 - (c) Use the "Auto B/C" and "Auto Focus" buttons to quickly adjust the background, contrast and focus of an image. Fine focus can be done by dragging the cursor left/right on the image.
7. If you need to image a different sample, press "Stop" and wait at least two minutes before pressing the Exchange button to bring the specimen chamber up to atmospheric pressure. This will let the filament cool, and prolong its life.

8. After inserting the new sample, slide the door closed, hold it in place gently, and press the Exchange button in to start pumping.

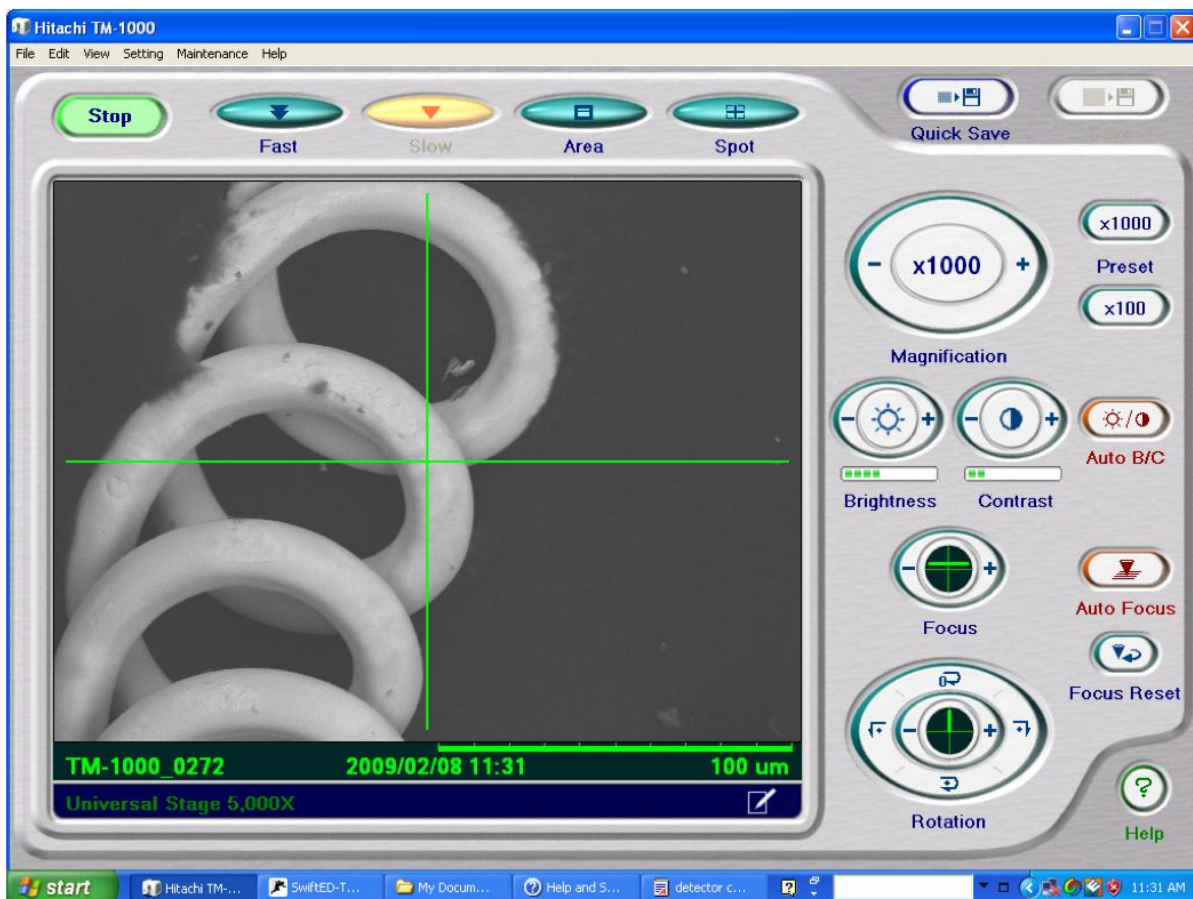


Figure 1

Shut Down

1. When done imaging, turn off the filament by pressing "Stop" in the TM-1000 program window.
2. Close the program(s) by clicking on the title bar "X" button.
3. You may remove your specimen, but please wait at least two minutes before pressing the Exchange button to bring the specimen chamber up to atmospheric pressure. This prolongs the filament life.
4. After removing your sample, close the door, hold it in place gently, and press the Exchange button in to start pumping to leave the chamber under vacuum when you are done with the instrument.